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**** WARNING ** WARNING ** WARNING ** WARNING ****
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May 24, 2007

04-Ala-80-1.6/2.7
04-0120L4
Addendum No. 4

Dear Contractor:

This addendum is being issued to the contract for construction on State highway in ALAMEDA COUNTY IN OAKLAND FROM 1.6 KM WEST OF THE TOLL PLAZA TO 0.3 KM WEST OF THE TOLL PLAZA.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on June 5, 2007.

This addendum is being issued to revise the Project Plans, and the Notice to Contractors and Special Provisions.

Project Plan Sheets 10, 57, 58, 59, 60, 117, 129, 162, 164, 293, 351, 553, and 554 are revised. Half-sized copies of the revised sheets are attached for substitution for the like-numbered sheets.

On Project Plan Sheets 161 and 163, Note 3 is revised as follows:

"3. Steel pipe piles shall be driven open ended."

In the Special Provisions, Section 5-1.15, "INTEGRATED SHOP DRAWINGS," the fourth and the tenth paragraphs are revised as follows:

"Prior to commencing work on the ISD, the Contractor (including any sub-consultants hired to work on the ISD and any reinforcing subcontractors) shall attend a meeting with the Engineer to discuss the ISD work.

After completed ISD's are received by the Engineer, the Contractor shall allow the Engineer 8 weeks for review and approval. For proposed modifications that are not approved by the Engineer, the Engineer will propose alternative modifications to the Contractor. Modifications that result in changes to the plans or specifications, as determined by the Engineer, will be made in accordance with Section 4-1.03, "Changes" of the Standard Specifications. The Contractor shall submit revised ISD incorporating the Engineer's proposed alternative modifications as specified in this section. For each revised ISD submitted by the Contractor, the Contractor shall allow the Engineer an additional 2 weeks for review and approval. Construction of the items listed above shall not begin until the Engineer reviews and approves the complete ISD's with all conflicts resolved."

04-Ala-80-1.6/2.7
04-0120L4

In the Special Provisions, Section 8-2.01, "PORTLAND CEMENT CONCRETE," the third paragraph is deleted.

In the Special Provisions, Section 10-1.14, "PROGRESS SCHEDULE (CRITICAL PATH METHOD)," is revised as attached.

In the Special Provisions, Section 10-1.17, "DOCUMENT MANAGEMENT SYSTEM," the sixth paragraph is revised as follows:

"The price quoted by the vendor for the above listed components of the DMS is $414,535.00, including sales tax. The Contractor will be required to enter into a service agreement and an end user license agreement with Integral Vision. The Contractor will also be required to enter into a sublicense agreement with the Department. The sublicense agreement shall be acceptable to both the Department and Integral Vision."

In the Special Provisions, Section 10-1.18, "OBSTRUCTION," the eighth paragraph is revised as follows:

"Attention is directed to "Sewer Video Survey" of theses special provisions regarding the existing 3250-mm East Bay Municipal Utility District (EBMUD) reinforced concrete outfall structure located along the south side of the electrical duct bank, as shown on the plans. This outfall structure will remain in service for the duration of the contract."

In the Special Provisions, Section 10-1.39, "SEWER VIDEO SURVEY," is revised as attached.

In the Special Provisions, Section 10-1.43, "DREDGING," Subsection "Site Management and Monitoring Plan (SMMP) Requirements for Ocean Disposal Area," is revised as attached.

In the Special Provisions, Section 10-1.51, "TEMPORARY TOWERS," Subsection "DRIVING EQUIPMENT," the first paragraph is deleted.

In the Special Provisions, Section 10-1.53, "CONCRETE STRUCTURES," Subsection "GENERAL," the following paragraphs are added after the last paragraph:

"For the concrete columns, the 28-day compressive strength of the concrete mix design shall not exceed a maximum of 42 MPa nor be less than the minimum 28-day compressive strength of 32 MPa shown on the plans.

Air-entrainment limits specified elsewhere in these special provisions or the Standard Specifications shall not apply to column concrete.

In order to facilitate meeting the minimum and maximum column concrete strength requirements, the Contractor may use any amount of air content, at his option. During construction, air content shall have an operating range of plus or minus 1.5% of the content shown on the accepted prequalification mix design and a compliance range of plus or minus 2% of the content shown on the accepted prequalification mix design. Concrete for up to three consecutive batches outside of the specified operating range but within the compliance range will be accepted as meeting the air content requirement. Any concrete beyond three consecutive batches that is outside the operating range will be rejected prior to placement.

For prequalification of column concrete, only certified test data conforming to the requirements of Section 90-9.01, "GENERAL," of the Standard Specifications shall be accepted to demonstrate that the proposed mix design meets both the minimum and maximum strength requirements."

04-Ala-80-1.6/2.7
04-0120L4

To Proposal and Contract book holders:

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the NOTICE TO CONTRACTORS section of the Notice to Contractors and Special Provisions.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the proposal.

Submit bids in the Proposal and Contract book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

This office is sending this addendum by GSO overnight mail to Proposal and Contract book holders to ensure that each receives it. A copy of this addendum is available for the contractor's use on the Internet Site:

http://www.dot.ca.gov/hq/esc/oe/weekly_ads/addendum_page.html

If you are not a Proposal and Contract book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

ORIGINAL SIGNED BY

REBECCA D. HARNAGEL, Chief
Office of Plans, Specifications & Estimates
Division of Engineering Services - Office Engineer

Attachments

10-1.14 PROGRESS SCHEDULE (CRITICAL PATH METHOD)

Progress schedules will be required for this contract. Progress schedules shall utilize the Critical Path Method (CPM). Attention is directed to "Cooperation," and "Obstructions," of these special provisions. Nothing in these special provisions shall be construed as relieving the Contractor from the responsibilities specified in Section 7, "Legal Relations and Responsibility," of the Standard Specifications. All schedules are required to reflect a reasonable plan to execute the contract scope of work. The Contractor shall be solely responsible for the content of the schedules and the execution of all contract requirements.

The provisions in Section 8-1.04, "Progress Schedule," of the Standard Specifications shall not apply.

DEFINITIONS

The following definitions apply to this section "Progress Schedule (Critical Path Method)":

A. Activity: Any task, or portion of a project, which takes time to complete.
B. Baseline Schedule: The initial CPM schedule representing the Contractor's original work plan, as accepted by the Engineer.
C. Controlling Operation: The activity considered at the time by the Engineer, within that series of activities defined as the critical path, which if delayed or prolonged, will delay the time of completion of the contract.
D. Critical Path: The series of activities, which determines the earliest completion of the contract (Forecast Completion Date). This is the longest path of activities having the least amount of float.
E. Critical Path Method: A mathematical calculation to determine the earliest completion of the contract represented by a graphic representation of the sequence of activities that shows the interrelationships and interdependencies of the elements composing a project.
F. Contract Completion Date: The current extended date for completion of the contract shown on the weekly statement of working days furnished by the Engineer in accordance with Section 8-1.06, "Time of Completion," of the Standard Specifications.
G. Early Completion Time: The difference in time between the current contract completion date and the Contractor's scheduled early forecast completion date as shown on the accepted baseline schedule, or schedule updates and revisions.
H. Float: The amount of time between the early start date and the late start date, or the early finish date and the late finish date, of any activity or group of activities in the network.
I. Scheduled Completion Date: The completion date of the last scheduled work activity identified on the critical path.
J. Free Float: The amount of time an activity can be delayed before affecting a subsequent activity.
K. Hammock Activity: An activity added to the network to span an existing group of activities for summarizing purposes.
L. Milestone: A marker in a network, which is typically used to mark a point in time or denote the beginning or end of a sequence of activities. A milestone has zero duration, but will otherwise function in the network as if it were an activity.
M. Revision: A change in the future portion of the schedule that modifies logic, adds or deletes activities, or alters activities, sequences, or durations.
N. Tabular Listing: A report showing schedule activities, their relationships, durations, scheduled and actual dates, and float.
O. Total Float: The amount of time that an activity may be delayed without affecting the total project duration of the critical path.
P. Update Schedule: The modification of the CPM progress schedule through a regular review to incorporate actual progress to date by activity and to reflect the current plan to complete the project.
Q. Time Scaled Logic Diagram: A schematic display of the logical relationships of project activities, drawn from left to right to reflect project chronology with the positioning and length of the activity representing its duration.
R. Bar Chart (Gantt Chart): A graphic display of scheduled-related information, activities or other project elements are listed down the left side of the chart, dates are shown across the top, and activity durations are shown as date-placed horizontal bars.
S. Near Critical Path: A path having 30 days or less of total float.
T. Delay: The time period during which some part of the construction project has been extended beyond what was originally planned due to unanticipated circumstances. A delay occurs when the respective activity or group of activities, requiring additional time, impacts the completion of the successor construction activity and also extend the scheduled contract completion date.

U. Data date: The day after the date through which a schedule is current. Everything occurring earlier than the data date is "as-built" and everything on or after the data date is "planned."
V. Narrative Report: A document submitted with each schedule that discusses topics related to project progress and scheduling.
W. State Owned Float Activity: The activity documenting time saved on the critical path by actions of the State. It is the last activity prior to the scheduled completion date.
X. Time Impact Analysis: A schedule and narrative report developed specifically to demonstrate what effect a proposed change or delay has on the current scheduled completion date.

The Engineer will schedule and conduct a Preconstruction Scheduling Conference with the Contractor's Project Manager and Construction Scheduler within seven days after the bidder has received the contract for execution. At this meeting, the requirements of this section of the special provisions will be reviewed with the Contractor. The Contractor shall be prepared to discuss its schedule methodology, proposed sequence of operations, the activity identification system for labeling all work activities, the schedule file numbering system, and any deviations it proposes to make from the Stage Construction Plans. The Engineer will submit a scheduling shell project on electronic medium, displaying an activity code dictionary consisting of fields populated with the Caltrans scheduling codes, filters, layouts, report formats, contract milestones, and a resource dictionary. The Contractor shall utilize these codes, filters, layouts, etc. and may add other codes as necessary, to group and organize the work activities. Periodically the Engineer may request the Contractor to utilize additional filters, layouts or activity codes to be able to further group or summarize work activities.

Also, the Engineer and the Contractor shall review the requirements for all submittals applicable to the contract and discuss their respective preparation and review durations. All submittals and reviews are to be reflected on the Interim Baseline Schedule and the Baseline Schedule.

GENERAL SCHEDULE ITEMS

The following items are applicable to all schedules:

A. Activity identification numbers for deleted activities are not to be reused. Added activities shall be assigned a new and unique activity identification number.
B. Activity descriptions are not to be revised when the scope of the activity is changed. The existing activity shall be deleted and a new activity shall be added.
C. When forecasting new durations for activities that have not started, the original duration field shall be revised.
D. All Resource requirements shall be included for all new construction activities.
E. All activities shall have durations of not more than 20 days and not less than one day unless permitted otherwise by the Engineer.
F. All activities in the schedule, with the exception of the first and last activities, shall have a minimum of one predecessor and a minimum of one successor.
H. Negative lags shall not be assigned for any activity relationships.
I. All out of sequence activities identified on the scheduling and leveling report shall be reviewed and their relationships either verified or changed.
J. The Contractor shall not add job inefficiencies or weather days to a project calendar without prior approval by the Engineer.
K. Offsite fabrication and material/equipment delivery activities shall be sufficiently detailed to allow monitoring of schedule progress.
L. The Contractor shall provide to the Engineer two copies of all schedules on electronic medium, together with printed copies of the network diagrams or bar charts and tabular reports described under "Project Schedule Reports", and the Schedule Narrative Report.

The Engineer's review and acceptance of schedules shall not waive any contract requirements and shall not relieve the Contractor of any obligation thereunder or responsibility for submitting complete and accurate information. Schedules that are rejected shall be corrected by the Contractor and resubmitted to the Engineer within 5 days of notification by the Engineer, at which time a new review will begin.

Errors or omissions on schedules shall not relieve the Contractor from finishing all work within the time limit specified for completion of the contract. If, after a schedule has been accepted by the Engineer, either the Contractor or the Engineer discovers that any aspect of the schedule has an error or omission, it shall be corrected by the Contractor on the next update schedule.

INTERIM BASELINE SCHEDULE

Within 15 days after approval of the contract, the Contractor shall submit to the Engineer an Interim Baseline Project Schedule which will serve as the progress schedule for the first 120 days of the project, or until the Baseline Schedule is accepted, whichever is sooner. The Interim Baseline Schedule shall utilize the critical path method of scheduling. The Interim Baseline Schedule shall depict how the Contractor plans to perform the work for the first 120 days of the contract. Additionally, the Interim Baseline Schedule shall show all required submittals working drawings, and review periods, and shall provide for all permits, and other non-work activities necessary to begin the work. The Contractor shall also submit a Summary Schedule, reflecting the duration of the contract, grouped by major areas of the project identified by the scheduling codes provided in the Caltrans scheduling codes or as defined by the Engineer. This summary schedule is for information purposes only and is to be used as a reference until the Baseline Schedule is accepted.

The Interim Baseline Schedule submittal shall include the data files used to generate the schedule on electronic medium.

The Engineer shall be allowed 10 days to review the schedule and to provide comments, including the Contractor's application of the supplied activity codes. All comments are to be implemented into the Baseline Schedule. Re-submittal of the Interim Baseline Schedule is not required. Late review of the Interim Baseline Schedule shall not restrain the submittal of the Baseline Schedule. No contract payments shall be made to the Contractor until an Interim Baseline Schedule is submitted in accordance with the above requirements.

BASELINE SCHEDULE

Within 30 days, after approval of the contract, the Contractor shall submit to the Engineer a Baseline Project Schedule including the incorporation of all comments provided to the Interim Baseline Schedule. The Baseline Schedule shall have a data date of the day prior to the first working day of the contract. The schedule shall not include any actual start dates, actual finish dates, or constraint dates (except for Contract Milestone dates) and activities scheduled to start or finish between the data date and the run date shall reflect dates that can be attained. The Baseline Schedule shall meet interim milestone dates, contract milestone dates, stage construction requirements, internal time constraints, show logical sequence of activities, and must not extend beyond the number of days originally provided for in the contract.

All task activities shall be assigned to a project calendar. Each calendar shall identify a workweek, and holidays. Different calendars shall be used for work activities that occur on different work schedules. Activities for the preparation and the review of submittals; offsite fabrication, and material/equipment deliveries are to be assigned to the same calendar unless approved by the Engineer. All non-activity periods for Environmental work restrictions shall be identified with the appropriate calendars.

The Baseline CPM Schedule submitted by the Contractor shall have a sufficient number of activities to assure adequate planning of the project and to permit monitoring and evaluation of progress and the analysis of time impacts. The Baseline Schedule shall depict how the Contractor plans to complete the whole work involved, and shall show all activities that define the critical path. Multiple critical paths and near-critical paths shall be kept to a minimum, as determined by the Engineer.

State owned float shall be considered a resource for the exclusive use of the State. The Engineer may accrue State owned float by the early completion of review of any type of required submittal when it saves time on the critical path. The Engineer will document State owned float by directing the Contractor to update the State owned float activity on the next schedule update. The Contractor shall include a log of the action on the State owned float activity and include a discussion of the actions in the narrative report. The Engineer may use State owned float to mitigate past or future State delays by offsetting potential time extensions.

The Contractor shall be responsible for assuring that all work sequences are logical and the network shows a coordinated plan for complete performance of the work. Failure of the Contractor to include any element of work required for the performance of the contract in the network shall not relieve the Contractor from completing all work within the time limit specified for completion of the contract. If the Contractor fails to define any element of work, activity or logic, the Contractor in the next monthly update or revision of the schedule shall correct it.

The Baseline Schedule shall be supplemented with resource allocations for every task activity to a level of detail that facilitates report generation based on labor craft and equipment class for the Contractor and subcontractors.

The Contractor shall optimize labor to reflect a reasonable plan for accomplishing the work of the contract and to assure that resources are not over committed in concurrent activities. The Contractor shall not create hammock activities for the purpose of resources loading. The Baseline Schedule shall not attribute negative float to any activity.

Along with the baseline progress schedule, the Contractor shall also submit to the Engineer time-scaled resource histograms of the labor crafts and equipment to be utilized on the contract.

Each schedule submitted to the Engineer will comply with all limits imposed by the contract, with all specified intermediate milestone and contract completion dates, and with all constraints, restraints or sequences included in the contract. The degree of detail shall include factors including, but not limited to:

A. Physical breakdown of the project;
B. Contract milestones and completion dates, substantial completion dates, constraints, restraints, sequences of work shown in the contract, the planned substantial completion date, and the final completion date;
C. Type of work to be performed, the sequences, and the major subcontractors involved;
D. All purchases, submittals, submittal reviews, manufacture, fabrication, tests, delivery, and installation activities for all major materials and equipment, including submittal of requests for audits of manufacturers and fabricators in conformance with "Manufacturing and Fabrication Qualification Audit for Materials" of these special provisions;
E. Preparation, submittal and approval of shop and working drawings and material samples, showing time, as specified elsewhere, for the Engineer's review.
F. Identification of interfaces and dependencies with preceding, concurrent and follow-on contractors, railroads, and utilities as shown on the plans or specified in the specifications;
G. Identification of each and every utility relocation and interface as a separate activity, including activity description and responsibility coding that identifies the type of utility and the name of the utility company involved;
H. Actual tests, submission of test reports, and approval of test results;
I. All start-up, testing, training, and assistance required under the Contract;
J. Punchlist and final clean-up;
K. Identification of any manpower, material, or equipment restrictions, as well as any activity requiring unusual shift work, such as double shifts, 6-day weeks, specified overtime, or work at times other than regular days or hours;
L. Identification of each and every ramp closing and opening event as a separate one day activity, including designation by activity coding and description that it is a north-bound, south-bound, east-bound, west-bound, and entry or exit ramp activity;
M. Separate resources graphs for the Contract's labor, equipment and critical path labor, with an accompanying analysis of each and explanation for any variances;
N. Equipment and labor shall be differentiated by a cost account code within the resource dictionary.
O. State owned float as the last activity in the schedule, at the end of which is the Scheduled Completion Date.

The Engineer will be allowed 30 days to review and accept or reject the baseline project schedule submitted. Rejected schedules shall be resubmitted to the Engineer within 5 days, at which time a new 15-day review period by the Engineer will begin.

PROJECT SCHEDULE REPORTS

Schedules submitted to the Engineer including Interim Baseline, Baseline, and update schedules shall include time scaled network diagrams or bar charts in a layout format requested by the Engineer. The network diagrams or bar charts submitted to the Engineer shall also be accompanied by four computer-generated mathematical analysis tabular reports for each activity included in the project schedule. The reports (215-mm x 280-mm size) shall include a network diagram report showing the activity columns only, a predecessor and successor report, a resource report (Interim Baseline and Baseline Schedules), and a scheduling and leveling calculation report. The network diagram report~~s~~ shall include, at a minimum, the following for each activity:

A. Activity number and description;
B. Activity codes;
C. Original, actual and remaining durations;
D. Early start date (by calendar date);
E. Early finish date (by calendar date);
F. Actual start date (by calendar date);
G. Actual finish date (by calendar date);
H. Late start date (by calendar date);
I. Late finish date (by calendar date);
J. Identify activity calendar ID;
K. Total Float and Free Float, in work days; and
L. Percentage complete.

Network diagrams or bar charts shall be sorted and grouped in a format requested by the Engineer reflecting the project breakdown per the Caltrans activity codes. They shall show a continuous flow of information from left to right per the project sorting and grouping codes; e.g., project milestones, submittals sub-grouped by description, and the construction activities sub-grouped by the scope breakdown structure. The primary paths of criticality shall be clearly and graphically identified on the diagrams or charts. The network diagram or bar chart shall be prepared on E-size sheets (914-mm x 1219-mm), shall have a title block in the lower right-hand corner, and a timeline on each page. Exceptions to the size of the network sheets and the use of computer graphics to generate the networks or bar charts shall be subject to the approval of the Engineer.

Schedule network diagrams the tabular reports shall be submitted to the Engineer for acceptance in the following quantities:

A. 2 sets of the Network Diagrams or Bar Charts;
B. 2 copies of the tabular reports (215-mm x 280-mm size); and
C. 2 copies on electronic medium, each with a backup of the current schedule file.

WEEKLY SCHEDULE MEETINGS

The Engineer and the Contractor shall hold weekly scheduling meetings to discuss the near term schedule activities, to address any long-term schedule issues, and to discuss any relevant technical issues. The Contractor shall develop a rolling 4-weeks schedule identifying the previous week worked and a 3-week look ahead. It shall provide sufficient detail to include the actual and planned activities of the Contractor and all the subcontractors for offsite and construction activities, addressing all activities to be performed and to identify issues requiring engineering action or input.

Each activity in the 4 week rolling schedule should be identified by an associated CPM schedule activity ID numbering system. This schedule should not be hand written. The Contractor shall utilize a schedule layout as acceptable by the Engineer. The schedule shall be electronically submitted to the Engineer one day prior to the scheduled meeting date.

MONTHLY CASH FLOW REPORTS

The Contractor shall allocate a portion of each bid item cost to the appropriate schedule activities. A minimum of one activity shall be added to the schedule for each bid item. The total of all activity costs shall equal the total contract bid amount. This information shall be sufficient to generate a monthly cash flow report showing the anticipated monthly contract progress payments. The format for the report shall be acceptable to the Engineer. Actual Progress Payments shall be made in accordance with Standard Specification 9-1.06, Partial Payments.

MONTHLY UPDATE SCHEDULES

The Contractor shall submit a Monthly Update Schedule to the Engineer once in each month within 5 days of the data date. The proposed update schedule prepared by the Contractor shall include all information available as of the 20th day of the month, or other data date as established by the Engineer. A detailed list of all proposed schedule changes such as logic, duration, lead/lag, forecast completion date, additions and deletions shall be submitted with the update.

The Monthly Update Schedule submitted to the Engineer will be accompanied by a Schedule Narrative Report. The report shall describe the physical progress during the report period, plans for continuing the work during the forthcoming report period, actions planned to correct any negative float, and an explanation of potential delays or problems and their estimated impact on performance, milestone completion dates, forecast completion date, and the overall project completion date. In addition, alternatives for possible schedule recovery to mitigate any potential delay or cost increases shall be included for consideration by the Engineer. The report shall follow the outline set forth below:

Contractor's Schedule Narrative Report Outline:

A. Contractor's Transmittal Letter;
B. Work completed during the period;
C. Description of the current critical path;
D. Description of current problem areas;
E. Current and anticipated delays;
    1. Cause of the delay;
    2. Corrective action and schedule adjustments to correct the delay; and
    3. Impact of the delay on other activities, milestones, and completion dates;

F. Changes in construction sequences;
G. Pending items and status thereof;
    1. Permits;
    2. Change Orders;
    3. Time Extensions; and
    4. Non-Compliance Notices;
    5. Notice of Potential Claims
H. Contract completion date(s) status;
    1. Ahead of schedule and number of days; and
    2. Behind schedule and number of days; and
I. Include updated Network Diagram and Reports.
J Response to Previous Schedule Comments

Portions of the network diagram on which all activities are complete need not be reprinted and submitted in subsequent updates. However, the submitted schedule and the related reports shall constitute a clear record of progress of the work from award of contract to final completion.

On a date determined by the Engineer, the Contractor shall meet with the Engineer to review the monthly schedule update. At the monthly progress meeting, the Contractor and the Engineer shall review the updated schedule and shall discuss the content of the Narrative Report. The Engineer will be allowed 10 days after the meeting to review and accept or reject the update schedule submitted. Rejected schedules shall be resubmitted to the Engineer within 5 days, at which time a new 5-day review period by the Engineer will begin. All efforts shall be made between the Engineer and the Contractor to complete the review and the acceptance process prior to the next update schedule data date. To expedite the process, a second meeting between the Engineer and the Contractor may be held.

SCHEDULE REVISIONS

If the Contractor desires to make a change to the accepted schedule, the Contractor shall request permission from the Engineer in writing, stating the reasons for the change, and proposed revisions to activities, logic and duration. The Contractor shall submit for acceptance an analysis showing the effect of the revisions on the entire project. The analysis shall include:

A. An updated schedule not including the revisions. The schedule shall have a data date just prior to implementing the proposed revisions and includes a project completion date;
B. A revised schedule that includes the proposed revisions. The schedule will have the same data date as the updated schedule and include a project completion date;
C. The Contractor should add resources for all new activities, also adjust resources for those activities that their remaining duration were changed;
D. A narrative explanation of the revisions and their impact to the schedule;
E. Computer files of the updated schedule and the revised schedule sequentially numbered or renamed for archive (record) purposes.

The Engineer will provide a response within 10 days to Contractor's proposed schedule revisions.

Within 15 days, the Contractor shall submit a revised CPM network for approval when requested by the Engineer, or when any of the following occurs:

A. There is a significant change in the Contractor's operations that will affect the critical path;
B. The current updated schedule indicates that the contract progress is 4 weeks or more behind the planned schedule, as determined by the Engineer; or
C. The Engineer determines that an approved or anticipated change will impact the critical path, milestone or completion dates, contract progress, or work by other contractors.

The Engineer shall be allowed 10 days to review and accept or reject a schedule revision. Rejected schedule revisions shall be revised and resubmitted to the Engineer within 10 days, at which time a new 10-day review period by the Engineer will begin. Only upon approval of a change by the Engineer shall it be reflected in the next schedule update submitted by the Contractor. The revised schedule shall also include a narrative explanation of the revisions and their impact to the schedule.

TIME IMPACT ANALYSIS

When the Contractor requests a time adjustment due to contract change orders or delayed activities or if the Contractor or the Engineer considers that an approved or anticipated change will impact the critical path or contract progress, the Contractor shall submit to the Engineer a written Time Impact Analysis illustrating the impact of each change or delay to the current contract completion date or milestone completion date, utilizing the current accepted schedule. Each Time Impact Analysis shall include a schedule update (an accepted schedule with a data date within the previous month of the event) reflecting the "before conditions", and schedule revision reflecting the "after condition", both with the same data dates, demonstrating how the Contractor proposes to incorporate the change order or delay into the current schedule. The schedule revision shall include the sequence of activities and any revisions to the existing activities to demonstrate the impact of the delay, or change into the schedule. The Time Impact Analysis shall also include proposed mitigation measures or work arounds including but not limited to alternate work calendars, re-sequencing of other activities, or performing work activities out-of-sequence to minimize the impact of the change order or the delayed activities.

Each Time Impact Analysis shall demonstrate the estimated or actual time impact based on the events of delay, the estimated or actual date of the contract change order work performance, the status of construction at that point in time, and the event time computation of all activities affected by the change or delay. The event times used in the analysis shall be those included in the latest update of the current schedule in effect at the time the change or delay was encountered.

Time extensions will be granted only to the extent that equitable time adjustments for the activity or activities affected exceed the total or remaining float along the critical path of activities from the time of actual delay, or from the time the contract change order work is performed. Mitigation measures shall be included in the analysis. The Time Impact Analysis shall also consider the use of State owned float as a mitigation measure. Time extensions will not be granted nor will delay damages be paid unless:

A. The delay is beyond the control and without the fault or negligence of the Contractor and its subcontractors or suppliers, at any tier; and
B. The delay extends the actual performance of the work beyond the currently approved contract completion date.
C. The delay impacts a fabrication or construction activity – delays to the Contractor's submittal or shop drawing process must impact a successor fabrication or construction activity. The Time Impact Analysis shall be based on the impact to fabrication or construction activities.

Time Impact Analyses shall be submitted within 15 days after the delay occurs or after initiation of the contract change order. The schedule files will be submitted on electronic medium along with the Time Impact Analysis, which shall include a narrative description of the delay, its impact on contract completion or milestone dates and proposed mitigation measures. Mitigation measures utilized to minimize the impact of the change order or delay shall include but are not limited to work arounds, re-sequencing of work, alternate work calendars, increased resources, expedited procurement and use of State owned float.

A response to each Time Impact Analysis by the Engineer will be made within 15 days after receipt of the Time Impact Analysis. The Engineer's review shall utilize actual data unless it is appropriate to use estimated data. Resolution of each Time Impact Analysis by the Engineer shall be completed after all effects of the disruption are documented, which may include mitigation measures. A copy of the Time Impact Analysis accepted by the Engineer shall be returned to the Contractor and the accepted schedule revisions illustrating the impact of the contract change orders or delays shall be incorporated into the project schedule during the first update after acceptance. Until such time that the Contractor provides the analysis, the Engineer may, at his option, construct and utilize the project as-built schedule or other method to determine adjustments in contract time.

FINAL SCHEDULE UPDATE

Within 15 days after the acceptance of the contract by the Director, the Contractor shall submit a final update of the schedule with actual start and actual finish dates for all activities. This schedule submission shall be accompanied by a certification, signed by an officer of the company and the Contractor's Project Manager stating "To the best of my knowledge, the enclosed final update of the project schedule reflects the actual start and completion dates of the activities contained herein."

EQUIPMENT AND SOFTWARE

The Contractor shall provide for the State's exclusive possession and use a complete computer system specifically capable of creating, storing, updating and producing CPM schedules utilizing the latest hardware and software technology. Before delivery and setup of the computer system, the Contractor shall submit to the Engineer for approval a detailed list of all computer hardware and software the Contractor proposes to furnish. The minimum computer system to be furnished shall include the following:

A. Complete computer system, including keyboard, mouse, 530-mm color SVGA monitor (1,024x768 pixels), current Intel Pentium IV micro processor chip, or equivalent or later;
B. Computer operating system software, compatible with the selected processing unit, for Windows XP;
C. Minimum one gigabyte (1000 MB) of random access memory (RAM);
D. A 100 gigabyte minimum hard disk drive, a 1.44 megabyte 90-mm floppy disk drive, 16x speed minimum DVD±RW/CD-RW drive, Ethernet card, two UBCUSB ports, and 56k modem;
E. A color-ink-jet plotter with a minimum 36 Megabytes RAM, capable of 300 dots per inch color, 600 dots per inch monochrome, or equivalent. Capable of printing fully legible, time scaled charts, and network diagrams, in four colors, with a minimum size of 914-mm by 1219-mm (E size) and is compatible with the selected system. Plotter paper and ink cartridges will be provided throughout the contract. HP Designjet 1055 CM, equivalent or later
F. CPM software shall be Primavera Project Planner, Version 3.1, or later;
G. Scheduler Analyzer Pro or equivalent – a suite of programs to assist in schedule analysis, the latest version for Windows XP and,
H. Microsoft Office software, the latest version for Windows XP, and McAfee Virus software or equivalent.

The computer hardware and software furnished shall be compatible with that used by the Contractor for the production of the CPM progress schedule required by the Contract, and shall include original instruction manuals and other documentation normally provided with the software.

The Contractor shall furnish, install, set up, maintain and repair the computer hardware and software ready for use at a location determined by the Engineer. The hardware and software shall be installed and ready for use within 30 days of the contract award. The Contractor shall provide 24 hours of formal training for the Engineer, and three other agents of the department designated by the Engineer, in the use of the hardware and software to include schedule analysis, reporting, and resource and cost allocations. An authorized vendor of Primavera Project Planner shall perform the training.

All computer hardware and software furnished shall remain the property of the Contractor and shall be removed by the Contractor upon acceptance of the contract when no claims involving contract progress are pending. When claims involving contract progress are pending, computer hardware or software shall not be removed until the final estimate has been submitted to the Contractor.

PAYMENT

Progress schedule (critical path method) will be paid for at a lump sum price. The contract lump sum price paid for progress schedule (critical path method) shall include full compensation for all labor, materials (including computer hardware and software), tools, equipment, and incidentals; and for doing all the work involved in preparing, furnishing, updating and revising CPM progress schedules. Also for maintaining and repairing the computer hardware and training the Engineer in the use of the computer hardware and software as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Payments for progress schedule (critical path method) will be made as follows:

A. Interim baseline schedule accepted, then 10 percent payment for progress schedule (critical path method) will be made.
B. Baseline schedule accepted, then 10 percent payment for progress schedule (critical path method) will be made.
C. Monthly update schedules accepted, then 75 percent payment for progress schedule (critical path method) will be made equally for each update.
D. Final schedule update accepted, then 5 percent payment for progress schedule (critical path method) will be made.

The Department will retain an amount equal to 25 percent of the estimated value of the work performed during the first estimate period in which the Contractor fails to submit an interim baseline, baseline, revised or updated CPM schedule conforming to the requirements of this section, as determined by the Engineer. Thereafter, on subsequent successive estimate periods the percentage the Department will retain will be increased at the rate of 25 percent per estimate period in which acceptable CPM progress schedules have not been submitted to the Engineer. Retention's for failure to submit acceptable CPM progress schedules shall be additional to all other retention's provided for in the contract. The retention for failure to submit acceptable CPM progress schedules will be released for payment on the next monthly estimate for partial payment following the date that acceptable CPM progress schedules are submitted to the Engineer.

The adjustment provisions in Section 4-1.03, "Changes," of the Standard Specifications, shall not apply to the item of progress schedule (critical path method). Adjustments in compensation for the project schedule will not be made for any increased or decreased work ordered by the Engineer in furnishing project schedules.

10-1.39 SEWER VIDEO SURVEY

This work shall consist of performing a video survey and inspection to document and to provide a report on the structural condition of the interior of existing East Bay Municipal Utility District (EBMUD) reinforced concrete outfall structure, from manhole to manhole at locations specified herein, before and after pile driving for the construction of the Mole Substation.

The outfall structure can be accessed through manholes located between Stations E 83+50 (Rt) and MRDTR 13+10 (Rt). Opening manhole covers will require lifting padeyes and eyebolts. The Contractor shall conduct a pre-construction survey of the site toidentify and mark all manhole and vent pipe locations, and to determine condition and accessibility.

The Contractor shall notify the EBMUD representative 48 hours in advance for assistance in performing the pre-construction survey of the site. The Contractor shall not perform the video survey and inspection work without the presence of an EBMUD representative.

The Contractor shall plan his operations accordingly because it will require EBMUD at least 30 days after receiving the Contractor's permit application to process and issue a Permit to Enter. The Contractor shall apply for a Permit to Enter from the EBMUD Wastewater Planning Division, Telephone (510) 287-1681, at least 35 days prior to initiating any work within the EBMUD sewer outfall easement.

SEWER VIDEO SURVEY LOCATIONS

No.	Location	Sewer Pipe Size
1	Within State right of way, between Rt, E 84+60 and E 86+60	3250 mm RCP Sewer Outfall (EBMUD)

Documenting and reporting of the video survey and inspection shall include narration on the condition of the sewer and show all structural deficiencies, including cracks, holes, exposed aggregates and reinforcing bars, honey combed areas, damaged construction joints, deteriorated concrete surfaces, infiltrations, root intrusions, and missing pieces, as well as the condition of manhole covers. The locations of all deficiencies shall be shown by stationing with reference points agreed upon by the Contractor and the Engineer. The Contractor shall provide the dimensions of all major structural deficiencies and provide supplemental photographs of such deficiencies when requested by EBMUD.

The EBMUD sewer outfall facility is subject to zero load. No construction equipment shall be allowed to cross the facility or to be within 3.8 m from centerline of the facility. The Contractor shall investigate, document and report the sewer conditions before commencement and after final completion of the project.

At least 10 working days prior to investigation, the Contractor shall submit for acceptance 5 copies of the proposed operations and safety procedure to the Engineer. At least one copy of these procedures shall be submitted to EBMUD 15 days in advance of planned work.

The Engineer will either accept or reject such procedures within 10 working days of receipt. Approval of the procedures will be contingent on them being satisfactory to the EBMUD. Such procedures must comply with the Safety Procedures Section of this special provision.

The Contractor shall call the EBMUD Wastewater Planning Division at (510) 287-1681 at least 10 days in advance of the interior inspection, and five days in advance for coordination and to gain access to the sewer.

The Contractor shall cooperate with local authorities relative to handling traffic through the area and shall make his own arrangements relative to keeping the working area clear of parked vehicles.

The Contractor shall prepare for the Engineer's approval, a written report documenting the results of its investigation.

Approval of the report will be contingent on it being satisfactory to the EBMUD. In this report, the Contractor shall place its emphasis on; first, the deficiencies discovered during the investigation; secondly; the proposed measures to remedy such deficiencies and; thirdly, the serviceability of the present sewer.

The Contractor shall: (a) after the pre-construction sewer investigation, deliver 2 copies of the report and 2 copies of the videotape 5 working days before actual start of construction; and (b) after post-construction sewer investigation, deliver 5 copies of the final report and 2 copies of the post-construction videotape, to the EBMUD Division of Wastewater Planning.

SAFETY PROCEDURES

Except to the extent that more explicit or more stringent requirements are stated herein, the Contractor shall comply with all applicable federal, State and local safety and health requirements and standards.

PRE-ENTRY AND CONFINED SPACE OPERATIONS

Pre-entry and confined space operations shall be performed in accordance with the provisions of Article 108 of the General Industry Safety Orders and Section 1532 of the Construction Safety Orders of Title 8 of the California Code of Regulations. These provisions shall govern:

A. Blocking of laterals.
B. Testing for the existence of dangerous water and air contamination.
C. Ventilation requirements.
D. Entry rate work within confined spaces.
E. Precautions for emergencies involving work in the sewer.
F. Other related work.

Testing shall take place for the following suspected conditions prior to entering the sewer, and at times during inspection:

1. Oxygen deficiencies.
2. Carbon dioxide.
3. Combustible gases.
4. Hydrogen sulfide (H_2S)
5. Carbon monoxide
6. Contaminated and infectious waste.

ADDITIONAL REQUIREMENTS

The Contractor shall provide safeguards, including traffic barriers, warning signs, barricades, temporary fences and other similar safeguards that are required for the protection of all personnel during the performance of this contract.

The Contractor shall provide to all workers and inspectors, protective, disposable clothing for sewage conditions consisting of fullbody coveralls, gloves, boot type covers on reusable footwear, eye protection, hardhats and safety tools as required by job conditions and CAL-OSHA safety rules and regulations.

The Contractor shall provide air ventilation and respiratory protection to workers and inspectors in accordance with an operation and safety procedures plan required by CAL-OSHA and accepted by the EBMUD.

The Contractor shall provide a plan for rescue of workers and investigators for review by the Engineer and for approval reviewed by the EBMUD.

A shutdown of EBMUD's Main Wastewater Treatment Plant (MWWTP) must take place in order to restrict flow in the outfall for the video survey and inspection to take place. The MWWTP can only be shut down during the dry weather season from April 15 – October 15. Shutdowns must take place during low tide and from 1:00 a.m. to 5:00 a.m. The MWWTP shutdown cannot last longer than 4 hours. The MWWTP cannot be shut down beyond these dates and times due to increases in flow. For each night of inspection, the Contractor shall ensure that all work is complete and manhole covers are properly secured in place before 6:00 a.m.

The Contractor must submit a written System Outage Request (SOR) to EBMUD 10 working days in advance of the planned work. An SOR must be submitted before each survey. The SOR must be approved by EBMUD Operations before the survey can begin.

The Contractor shall coordinate lockout/tagout procedures with EBMUD as needed. Contractor shall be ready to apply locks and tags in conjunction with EBMUD during outfall entry. The Contractor shall be constant contact with EBMUD Operations during the duration of the shutdowns.

PAYMENT

The contract lump sum price paid for sewer video survey shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in conducting the sewer video survey, including providing plans, reports and video tape, safety devices and precautions, and sewer cleaning as necessary to facilitate the video survey and inspection, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Site Management and Monitoring Plan (SMMP) Requirements for Ocean Disposal Area

Disposal of approved dredged material at the SF-DODS shall conform to the ACOE permit, the most current SMMP Implementation Manual guidelines, and the following requirements:

A. Barges shall not leave the bay when wave heights along the transit route are predicted to exceed 3.05 meters and wave periods are less than 12 seconds, or when waves are greater than 4.88 meters regardless of wave period. Under less severe weather conditions, extra precautions (such as reducing the load up to 15 percent) shall be taken to prevent spillage or other loss of material during transit to the site. The Contractor shall verify predicted Sea State via marine forecasting on the radio and Internet and note results of both forecasts in their daily quality control report. No vessel shall commence transit without such verification and notation in the daily quality control report.

B. For each tugs trip to the ocean disposal site, barges shall be loaded to 80 percent of their load lines or 80 percent of bin capacity, whichever governs, to avoid spillage. Loading shall be reduced below 80 percent if weather or sea conditions cause spillage.

C. No disposal barge shall be filled above its load limitation that shall be defined as 80 percent of its load line or 80 percent of bin capacity, whichever governs, and all loads shall be certified by the Engineer that the requirement has been met prior to departing for the disposal area. The scows shall have the 80 percent load line clearly marked inside of the bin for visual verification by the Engineer.

D. No water or dredged material shall be permitted to leak or spill from barges during transit to the ocean disposal area.

E. The maximum tow speed shall be 11.1 km/hour (6 knots) over the bottom for loaded barges or as approved by the Engineer.

F. Tugboats with barges shall remain outside of the territorial sea boundary surrounding the Farallon Islands by following the inner portion of the outbound western shipping lane for transit into and out of the bay. Vessels shall remain at least 5.6 km from the Farallon Islands at all times. The Contractor shall furnish a vessel transit alignment plan for approval to the Engineer for submittal to the Army Corps of Engineers.

G. The U.S. Coast Guard's (USCG) Offshore Vessel Movement Reporting System, which extends 61.2 km offshore from Mount Tamalpais, shall be used to track barges within its range.

H. A functioning back-up tracking system, meeting the minimum accuracy requirement listed for the primary tracking system, shall be in place on the towing vessel. If the primary tracking system fails during transit, the disposal trip may continue, only so long as the back-up tracking system remains operational, by placing the towing vessel in such a location that, given the compass heading and tow cable length to the scow ("lay back"), the estimated scow position is within 600 m of the center of the ocean disposal site. In such cases the towing vessel's position and the tow cable length and compass heading to the disposal vessel shall be recorded and reported. Further disposal operations using a disposal vessel whose tracking system fails shall cease until those primary capabilities are restored.

I. No more than one disposal vessel shall be present within the permissible dumping target (as described in the following paragraph) at any time.

J. When dredged material is discharged within SF-DODS, no portion of the vessel from which the materials are to be released shall be further than 600 m from the center of the ocean disposal site at latitude 37°39'N; longitude 123°29'W (NAD 83).

K. The Contractor shall maintain daily records of dredging operations, transportation schedules, barge load volumes disposed, and exact location and time of disposal.

L. The tug captain shall maintain a copy of all weather reports and shall make wind and sea observations.

M. Each tug boat shall maintain a computer printout from GPS or other approved navigation system showing transit routes and disposal coordinates, including the time and position of the disposal barge when the barge doors open and close.

N. The Contractor's quality control staff shall observe all dredging operations and submit reports containing a description of operations for each barge load, a checklist, a transit route map, a printout of coordinates from each waypoint and release point, a record of radio transmission and facsimile from the tug captain on a weekly basis.

O. The Contractor shall allow appropriate independent observers on a sufficient number of vessel trips as specified in various permits obtained by the Department to be present on disposal vessels on all trips to the ocean disposal area for the purpose of conducting surveys and monitoring. At a minimum, the Contractor shall ensure that independent observers are present on at least one disposal trip in any calendar month in which a disposal trip to the ocean disposal area is made.

P. The Contractor shall allow on-board inspections by United States Environmental Protection Agency (EPA) Region IX staff, Army Corps of Engineers staff, or a certified inspector to ensure that the transportation and disposal of sediments occur within the designated discharge zone and that compliance with all permit terms and conditions are met.

Q. The Contractor shall report any violation to the Engineer. In the event of a violation, the Contractor must make all necessary changes to bring disposal operations into compliance before making another trip to the ocean disposal area.

R. Development and implementation of more sophisticated surveillance systems, which can be demonstrated to the Engineer to be effective and capable of being audited, may be substituted pending approval from the Engineer for one or more of the above provisions.

S. The Contractor shall allow observers from the Point Reyes Bird Observatory or other appropriate independent observers as specified in permits to be present on disposal vessels on all trips to the ocean disposal area for the purpose of conducting surveys of seabirds and marine mammals.

T. The primary tracking system for recording ocean disposal operations shall be disposal vessel-based. Disposal vessels shall use an appropriate Global Positioning System tracking system capable of indicating and recording the position of the disposal vessel with a minimum accuracy of 3.0 m during all transportation and disposal operations. Draft and bin sensors shall be positioned near both the forward and aft ends of the disposal vessel, and calibrated to accurately record vessel draft and load level within the bin, respectively. The primary disposal tracking system shall indicate and record the position, draft, and load level within the bin of the disposal vessel throughout transit to the disposal site, during dumping, and for at least one-half hour after disposal is complete, as well as indicate and record the time and location of the beginning and end of each disposal event. This primary disposal tracking system shall indicate and automatically record the position, draft and load level within the bin of the disposal vessel at a maximum 5-minute interval while outside the SF-DODS disposal site boundary, and at a maximum 15-second interval while inside the SF-DODS disposal site boundary.

U. Data recorded from the primary disposal tracking system shall be posted by a third-party contractor on a near-real-time basis to a World Wide Web (Internet) site accessible by EPA Region 9, the San Francisco District USACE, and NOAA's Gulf of the Farallones National Marine Sanctuary. The Web site shall be searchable by disposal trip number and date and, at a minimum for each disposal trip, it shall provide a visual display of: the disposal vessel transit route to SF-DODS; the beginning and ending locations of the disposal event; and the disposal vessel draft and load level in the bin throughout the transit. The requirement for posting this information on the Web is independent from the hard-copy reporting requirements. The third-party system shall also generate and distribute "e-mail alerts" regarding any degree of apparent dumping outside the disposal zone of SF-DODS, and regarding any apparent substantial leakage/spillage or other loss of material en route to SF-DODS. Substantial leakage/spillage or other loss shall be defined as an apparent loss of draft of one foot or more between the time that the disposal vessel begins the trip to SF-DODS and the time of actual disposal. E-mail alerts for any disposal trip shall be sent within 24 hours of the end of that trip to EPA Region 9, the San Francisco District USACE, the relevant National Marine Sanctuary if the event triggering the alert occurred within a Sanctuary boundary, and to other addressees as may be indicated by EPA or USACE."